



A BRIEF HISTORY OF NAVIGATION.



GENERAL FEATURES OF THE WORLD ACCORDING TO THE GEOGRAPHERS JUST BEFORE THE CHRISTIAN ERA.

PART II.

CAUSES OF THE ROMANCE OF ANCIENT NAVAL HISTORY.

We have already observed that the scene of the earliest known navigation was the Mediterranean Sea, which naturally seemed to the ancients to be situated *in the middle of the earth*; as is implied by its name. As navigation advanced only at a creeping pace, and as but a small amount of fresh experience was laid up by one generation for the benefit of the next, it took very many ages to explore the Mediterranean, Tyrrhene, Hadriatic, and Aegean seas. The people of Tyre and Sidon, the Phœnicians, "whose merchants were princes," (Isaiah xxiii. 8.) were among the first whom the spirit of commerce and the desire of gain had made dissatisfied with what had hitherto

seemed the natural limits of marine excursion. The great antiquity of the Phœnicians, however, is perhaps the reason why our knowledge of them is obtained from incidental and isolated accounts: but on the naval spirit and industry of Carthage, a colony planted by the former power, in the ninth century before Christ, the light of history, owing to their connexion with the Romans, is more abundantly shed. With the Carthaginians, perhaps, had originated the idea of quitting the Mediterranean by the straits of Gades, (now Gibraltar,) of sailing southward, circumnavigating the coast of Africa, and then returning northward by the Red Sea, towards the Levant, or eastern side of the Mediterranean. This notion seems to have been cherished for ages, as the prime, the crowning enterprise, long thought of and debated; but which only a solitary few, at long intervals of time determined to try

to effect. Knowing only a portion of the globe, and conceiving that portion to be upon an extended plane, those who held a voyage from Crete to Egypt to be a signal proof of naval courage, and who had never reached Sicily or Africa, but by a wayward tempest, or by shipwreck, and who were then objects of wonder at having escaped the dangers of Scylla and Charybdis, and the Syrtes, those wave-bound prisons of mariners, might justly have feared for themselves, in being committed to unknown waters, and in tracking shores, which the reports of others, who had never seen these regions, no less than their own fears, had represented as the abode of every horror. In short, distance from the land seems to have alarmed all the ancients; who, upon every occasion, when quitting sight of the shore fancied they saw, as Homer tells us,—

A length of ocean and unbounded sky,
Which scarce the sea-fowl in a year o'erfly.

The general truth of these observations is corroborated by the story of the Pamphylian, who was taken prisoner, and carried to Egypt. He was kept as a slave, for a very long time, at a town near one of the mouths of the Nile, where Damietta now stands. Being frequently employed to assist in maritime business, he conceived the idea of committing himself to the mercy of the waves in a sailing boat, in order that he might once again behold his native country. Having provided himself, to the best of his means and ability, he set sail, resolving rather to perish in the bosom of the old ocean than to remain longer in captivity. He traversed the vast expanse of waters which lies between Egypt and Asia Minor, and arrived safely at Pamphylia. From this bold and unusual adventure he lost his original name, and received the appellation of *Mononauates*, or *the lone sailor*, which, for a long time after, we may presume, served his family as a patent of nobility. We have the foregoing account from Eustathius, the commentator of Homer.

Navigation has served to bring the families of the earth nearer together, to remove ignorance and barren limitation of thought; and consequently, it has been a means for advancing the landmarks of knowledge and civilization, and for helping man to appreciate the acts of a Divine Providence. But, as it is entirely consonant with humanity that the increase of knowledge should carry with it its alloy of evil, we find that the means for spreading knowledge, served also as a vehicle for the diffusion of falsehood. The accounts, therefore, that have been handed down to us of the exploits of early navigators must be received without prejudice either way, and their errors and their romances must be imputed to the right source. This source seems to be of a twofold nature; firstly, misapprehension in making their observations and statements, arising from ignorance and want of experience, which engender fear; secondly, the love of lucre is so strongly implanted in the human mind, that this affection is oftentimes too apt to get the better of all other feelings, whether good or ill. Hence, in the growing spirit of trade and commerce, the monopoly long enjoyed by the Phœnicians, and subsequently by other commercial nations, was protected by the publication of appalling accounts of the dangers, distresses, and horrors, which they underwent; the dread of which, they hoped, would deter the sailors of other regions from disputing with them a claim to the wealth of the earth. In looking back, therefore, through the vista of time, to the early condition of this world, and in studying the accounts thereof, as handed down from the heathen authors, who are our chief guides, we must separate the probable from the improbable, and the true from the false, and revolve in our minds the progressive condition of mankind, as illustrating the moral government of the Almighty.

VOYAGES RELATED IN ANCIENT HISTORY—FEARS OF THE ANCIENT MARINERS.

THE general correctness of the foregoing observations may be estimated by an epitome, in the way of illustration, of the principal ancient voyages, with which history makes us acquainted. We may remark, in the highly coloured memoirs of the times, that many things which were false were credited then, and still later; whereas, other things, which have been subsequently recognised as perfectly true, seemed at that time so startling to the conceptions of mankind, that no credence was awarded to them. The accounts of the first and third voyages, which follow, are mainly derived from the rhapsodies of the poets.

1. In the thirteenth century B. C., Jason, accompanied by

a Phœnician pilot, sailed in the ship *Argo*, over the Euxine, which we now call the Black Sea, to recover the treasure which had been carried away by Phryxus, in the ship *Aries*, or *Ram*. The Phœnician word for *treasure*, is almost the same as the Greek word for *fleece*. Hence, the confusion of ideas, by which the poets profited to adorn their legends, for Jason was reported to have made a voyage to recover the ram with the golden fleece. Those who manned Jason's ship, were called *Argonauts*, or *sailors of the Argo*; and, at their return, declared that their passage had been alongside of the abodes of the just and the prisons of the infernal regions.

Some endeavour to clear up the account of this voyage, by relating that the inhabitants on the eastern side of the Euxine Sea were in the habit of extending fleeces of wool, to catch the golden particles which were washed down from Mount Caucasus.

2. It is believed by some commentators on the Bible, that Solomon, who lived about a thousand years before the Christian era, sent large fleets down the Red Sea, and so eastward to India; or towards the south-west, along the African coast. These ships were managed by Tyrian mariners who were the most expert of the day; yet, for want of the mariner's compass*, their navigation was performed by coasting along the shores; so that a voyage to India is said to have frequently taken up three years, as we read in the Sacred Record. Prideaux thinks that the succeeding kings of Judah carried on the same commerce; which was at length lost, when Elath, their port on the Red Sea, was taken from King Ahaz by Rezin, King of Damascus. (2 Kings xvi. 6.) It would seem as if this intercourse with India was stopped for several centuries after the times we have just spoken of.

3. The following mythological narration may, by a little calm analysis, be found to consist of some degree of truth. Neptune is reported to have delivered the princess Hesione from a monster, raised by some divine interposition out of the sea, and to which she was exposed by express command of the oracle. It is probable that this Neptune was Ramesses, who, being a chief of restless disposition, quitted Egypt, his native country, incited either by a thirst of effecting some territorial discovery, or a lust of acquiring by conquest the dominion of some foreign country. Chance or inclination conducted him and his followers to that spot, where their bravery as warriors, and their skill in passing through a country by means deemed preternatural by all not acquainted with them, made them to be honoured and feared, as beings of a superior order. The marine monster we may fairly interpret to have been a vessel, conveying to the same spot some unknown adventurers equally bold, but who, being less powerful, or less fortunate, fell easily before the Egyptians.

4. Necho, King of Egypt, in the year 610 A.C., endeavoured to solve the grand nautical problem of Africa. He employed Phœnician navigators to set sail from the Red Sea, which lay at the east of his dominions, and to explore towards the south. We are told that they spent three years in the voyage; and, as the ships of the ancients did not admit much room for stowing away provisions, they debarked at times on the coast, sowed grain, waited its ripening, reaped, prepared food, and again set sail. This they did in each year, being favoured with the maturing beams of a tropical sun. At length, to their great joy and astonishment, they reached the Straits of Gibraltar, passed between the pillars of Hercules, two rocks being the nearest and opposite points of the continents of Europe and Africa, and at length arrived safely at the shores of Egypt.

In the publication of this memorable voyage, the world was astonished at being informed, that the sun, while the Phœnicians were passing round the southern part of Africa, was at their right hand; or, in other words, that it described its course from East to West, in the northern heavens; or, speaking still more simply, that it appeared at mid-day in the north, contrary to their former experience.

To an inhabitant of the equator, the sun will appear at noon, during one half of the year, in the north; during the rest of the year, in the South. At the southern promontory of Africa, or Cape of Good Hope, which is below the southern tropical line, the sun will always appear to attain its meridian in the north; and it is evident that the order of their voyage would keep the coast on their right hand continually.

We are given to understand that the relation of this voyage was almost universally discredited among the an-

* See *Saturday Magazine*, Vol. III., p. 116.

ients, for the very reason which should have moved them to belief; namely, the appearance of the Sun in the North at mid-day.

5. Darius, the son of Hystaspes, being the sovereign of the vast Persian Empire, was influenced by that insatiable ambition which has distinguished all conquerors. He planned an expedition to India, about 510 B. C., in order to conquer the country; but that he might not proceed without knowing something of the nature of the country he was about to attack, he fitted out a naval expedition, which he placed under the command of Scylax, the Caryandean, giving him orders to sail down the river Indus, into the Southern Ocean; then to return by steering westward, and to make the best discoveries he could, as to the strength and riches of the countries on both sides of the river, as also on the sea-coast. Scylax, in pursuance of these instructions, passed down the Indus into the Indian Ocean, and returned by the straits of Babel-mandel into the Red Sea, and landed on the Egyptian coast, near the neck of land which we now call the Isthmus of Suez. Scylax employed about thirty months in making this voyage; and gave a favourable report to Darius concerning the nature of the countries which he had seen. Accordingly, Darius fitted out a naval armament, which was to co-operate with his army, in the subjugation of the Indians; this attempt of Darius was successful; and opened the way for a more frequent intercourse between India and the nations bordering on the Mediterranean. The voyage of Scylax is believed to have been the first maritime expedition to India.

6. The next attempt to sail round the continent of Africa was that of Sataspes, a Persian nobleman, whom Xerxes had condemned to death, but whose sentence was commuted to the circumnavigation of Africa. He sailed from Egypt, in the year B. C. 480, through the straits of Gibraltar; and then southward. But, horror-struck at the mighty waves of the Atlantic, those walls of water, which dashed upon the shores of the desert,—after beating about for some months, he returned home, and suffered according to his original sentence.

The Persians were generally unacquainted with maritime affairs, and therefore never made any advance in the naval art, worth describing; this accounts for the want of perseverance on the part of Sataspes and his crew. The Athenians had made great improvements in their war-shipping, when the Persians attacked them during the reign of Xerxes. These improvements related chiefly to the formation of decks over the rowers, wherein the men of war carried on their operations without interfering with the rowers, and impeding the motions of the ship. This is believed to have contributed greatly to the success of the Athenians over the Persians, in their naval conflicts with that power.

7. In a collection of ancient voyages, published about one hundred and thirty years ago, there is a curious account of the discovery of an island, about five or six hundred years before Christ. There can be no doubt that this narrative is founded in truth; but that it is made more important than it really was by exaggeration, and a love of the marvellous. It is a translation from an ancient writer.

"There was one Jambulus, who from his youth was addicted to learning; his father was a merchant; and, after his decease, the son applied himself, with great diligence, to the same profession. This man, travelling into Arabia, in order to purchase spices, was there taken prisoner, with all his company, by a party of robbers. At first, he and one of his companions were employed in keeping sheep; but they were soon after carried off by the Ethiopians, inhabiting the coast, who conveyed them into their own country, in order to serve a very extraordinary purpose. These Ethiopians had a custom, which had then subsisted six hundred years, and was originally derived from the direction of an oracle, to expiate the sins of their nation once in an age, or generation, which with them comprehended the space of thirty years, by exposing two strangers, in the following manner:—

"They prepared a little vessel, well built, and extremely well equipped, with provisions for six months; on board of which the men were put, at a certain season of the year, with instructions to steer directly south, in order to arrive at a certain fortunate island, inhabited by a king and some hospitable people, with whom they might live happily all the rest of their days. The oracle declared, that if these men succeeded in their voyage, the country would enjoy rest and quiet for many years; but if, frightened by the dangers of the sea, they should return, it was ominous to Ethio-

pia; and therefore, they threatened Jambulus and his companion with the severest punishments, in case they did not prosecute their voyage. When the season of the year came, the Ethiopians celebrated the festival of Purgation with most splendid sacrifices; and then, having crowned each of them with garlands, they put Jambulus and his companion on board the vessel that had been prepared for them, and obliged them to put to sea.

"They were four months tossed by the winds and waves, before they arrived on the coast of the island to which they were bound; but at length they reached it safely. In its form it is almost round, being about five thousand stadia in compass; containing about five hundred of our miles, if we allow six hundred stadia to a degree. As soon as they came within sight of land, the people on the island crowded to the shore, to behold them: and, when they landed, multitudes came from all quarters to gaze at and admire them, wondering how they came thither; but treating them with the utmost kindness and civility, and offering them, with the greatest readiness, whatever their country afforded.

"These people differed not a little from other nations in their appearance, as well as in their manner; for they were all of a pretty equal size, each of them about four cubits, or six feet high. They bent and turned their bodies with such agility, that their bones seemed to our travellers as flexible as the sinews of other people: their bodies were very tender, notwithstanding which, they were so strong, that whatever they grasped could not be forced out of their hands. On their heads, eye-brows, eye-lids, and on their chins, they had hair; but the rest of their bodies was perfectly smooth. They were handsome and well-shaped; only the holes in their ears were much wider than those of other men, and had fleshy protuberances in them. Their tongues were very singular, being by nature somewhat divided, and cut in their infancy to the very root, so that they seemed double, which enabled them to imitate the notes, and even the chattering of birds; and, if our travellers say true, they could discourse with two people at once.

"This island is situated in a most excellent and moderate climate, lying very near the Equator, so that the people are neither scorched with heat nor perished with cold; enjoying at once, all the seasons, without any division; like ours, of Spring and Harvest. The days and nights there are always of equal length; neither is there any shadow at noon-day, because the sun is directly in the zenith. They are learned in all sorts of sciences, especially in Astrology. They use eight-and-twenty particular letters, for the expressing what they mean, composed of seven characters, each of which is varied four ways. They live long, without ever being sick, and commonly to one hundred and fifty years of age.

"After Jambulus and his companion had continued in this island seven years, they were compelled to depart, as persons of a vicious life, and not to be broken of foreign customs. Their ship, therefore, being again fitted out for them, and well furnished with provisions, they were constrained to put to sea; and, after continuing their voyage for above four months, they fell, at length, upon the sandy shallows of India, where his companion was drowned; and himself was afterwards cast ashore near a certain village, and carried away by the inhabitants of the place to the king, who was then at a city called Polybothra, or Polimbothra, many days' journey distant from the sea; where he was kindly received by that prince, who had a great love for the Grecians, and was studious in the liberal sciences. At length, having obtained provision from the king, he first sailed into Persia; and from thence safely arrived in Greece.

"It has been supposed by most commentators on the above account, that the main incidents are true; but, as was before observed, they have had a tinge of the marvellous imparted to them. With respect to the island mentioned, some have supposed it to be Sumatra,—others Borneo,—others again Java,—while one writer has considered it to be one of the Maldivé Islands.

8. About 500 years B. C. the Carthaginians fitted out two expeditions, for the sake of prosecuting discovery to the north and to the south, after clearing the Herculean straits. Hanno commanded one fleet, and proceeded southward, along the coast of Africa; and Himilco steered northward, along the Iberian and Gallic shores.

Those under Hanno, steered round by Mount Atlas, the pillar of heaven, and doubled "the African Forehead," as its great western promontory was called. By day the land was too hot to walk upon; the country seemed to lie silent



REPRESENTATIONS OF WAR-GALLEYS ON ANCIENT ROMAN COINS.

and deserted, in the full unmitigated glare of a vertical sun, but by night the mountains seemed on fire, songs of rejoicing were heard, accompanied with the sounds of flutes, drums, cymbals, and gongs, together with cries, which waked the shrill echoes of night, and startled the senses of the Punic sailors. Scarcely different have been the records of modern travellers, respecting the inhabitants of these tropical wilds; who, fearing to be scorched by the solar ray, pass the day in caverns, or in sylvan shades, and wake up into lively existence under the milder beams of the moon and stars. Here they saw the various species of the monkey-tribe, pre-eminent among which is the ourang-outang,—original of Satyrs. The Thessalians had, before this, given rise to the fables of the Centaurs, by appearing to their neighbours on horses, which they had been the first to tame. In these places gold was found to be the universal metal; so common that the chains of captives were forged from it. The Carthaginians relate that the transactions which they had with the people of the African coast were carried on in dumb-show, that, a signal having been made with smoke, the savages placed the goods which they had to dispose of on the coast and retired, and that the Carthaginians, having removed these goods, deposited an equivalent. If that which the latter laid down, did not satisfy the former, it was not removed until a suitable addition had been made. This sort of barter is the primeval state of commerce. They were once astounded at the sight of sheets of flame, traversing the country and spreading in every direction down to the sea-shore; a conflagration made by the natives to get rid of the dry and waste grass at the end of autumn. Such were the causes of Africa being the reputed dwelling-place of the Gorgons, and other monstrous creations, springing from ignorant fear. Pliny tells us that this voyage was effected round the whole extent of the African continent.

Himilco, we are told, sailed as far as Britain and Ireland, the great Western Islands. It is generally, and with great reason, believed that the Phœnicians, and subsequently the Carthaginians, traded to the south-western coasts and islands of Britain for tin. Hence, Cornwall and the Scilly Isles were called by the ancients *Cassiterides*, or *Tin-countries*, a term derived from the Phœnician and Sanscrit.

9. Pytheas, an illustrious navigator of antiquity, who flourished in France, at Marseilles, a colony from Greece, about 400 years B.C., directed his course to the north-western parts of Europe. He reached Britain, then called *Al-bion* (Albion), or *White-land*, from the appearance of its cliffs at a distance. He kept on sailing, we are told, towards the north, and arrived at Thule. This is supposed to have been Iceland. Of this place, as also of the other islands and coasts of this sea, he relates that he found, in some parts, the light of the setting sun continuing so strong, till dawn of day, that the stars could not venture to appear; in others he found the sun shining by day and night. This account seems to have perplexed those who would otherwise have been inclined to credit him; but this fact, related by Pytheas, is quite natural during the middle of our summer, when approaching towards the Arctic circle. The converse of this, the polar winter, or the effects of it, felt less in proportion to the diminution of latitude, may apply to the account which we have of Ulysses, who, we read, sailed, perhaps at the fall of the year, to the ends of the ocean, where the Cimmerians dwell in profound gloom, who see neither the rising nor setting sun, but have the veil of night for ever spread over them. The credit of Pytheas was not much improved by his accounts of the four and six-horned sheep on the shores of the Baltic; but modern information attests the general accuracy of the Massilian sailor. Some part of his story wears, at first sight, a fabulous aspect; when we find from Tacitus, who retails it from him, that the noise of the sun in its passage below the ocean is heard; and that the

figures of the gods appear visible, crowned with immortal light. By the latter observation we are to understand the varied effects of the *Aurora Borealis*; by the former the hollow noise of the rolling sea against the dreary shores of Norway. He intimates, that, in going very far to the north, sea, land, and air, seemed all confused; owing perhaps to fogs:—and that the water was of such a dense character, as could hardly be cleaved by the ship's prow; alluding, perhaps, to the strong tides of those seas. He is said to have been the first who ascribed the tides to the influence of the moon. The vulgar opinion, even up to the time of Mefia, in the middle of the first century after Christ, was that the earth was a huge animal, the heaving of whose breast occasioned the rise and fall of the waters. Another opinion was, that the ocean had within itself vast caves, into which the water was regularly received, and out of which it was again as regularly ejected. Previously to quitting the Mediterranean, the tidal influence had not come under the consideration of man. This sea scarcely indicates any perception of that lunar attraction, which operates upon the waters of the earth generally. The probable reason is, that this sea, as also the Baltic, which admits of a parity of reasoning, is almost entirely cut off from the main oceans; and that the narrowness of the connecting straits does not allow the swell of the great waters to be felt within the requisite time of the moon's passing the meridian.

10. Before speaking of the naval exploits of Alexander the Great, of Macedon, we may mention that Curtius gives a circumstantial account of a fire-ship, which was equipped by the Tyrians, at the time their capital was besieged by Alexander. Having selected one of the largest galleys they possessed, they loaded it by the stern with stones and other ballast, so that the prow became considerably elevated above the surface of the water. The whole of the vessel, which was above water, was covered very thickly with sulphur and other inflammable substances; which operation being completed, advantage was taken of a wind favourable for the attempt, and all the sails being set, the crew, who, in aid of the sails, used their oars also, directed it towards the mole which Alexander had, with so much difficulty, laboured to construct. When they had approached sufficiently near to the destined object of destruction, the vessel was set on fire, and the crew jumped into boats, which had followed for the purpose of receiving them. This project completely succeeded, and Alexander was frustrated in his attempt on Tyre at that period. This place he ultimately subdued, and having no more land to conquer he sought the waters.

We now come to the voyage of Nearchus, the Macedonian admiral, down the Indus, along the Erythrean Sea, and up the Persian Gulf, as far as the mouth of the Tigris. Alexander the Great, having made himself omnipotent by land, resolved to encroach, at least by his lieutenants, on the realms of ocean. He therefore set in motion an expedition for maritime discovery. He sailed at the head of the fleet down the Indus, and gazed upon the expanse of ocean, which the ancients deemed the circular boundary of the world. The ocean had been held, from the oldest times, to be a river running round the earth; which river was bounded by the dark clouds of heaven. Such, we are told, was it depicted on the shield of Achilles, which seems to have presented on its surface, a map of the world, as then known. That this notion was very ancient we learn from the Sacred Writings:—"When I made the cloud the garment thereof, and thick darkness a swaddling-band for it." Job. xxxviii. 9. The writer of the Book of Job probably lived nearly 2000 years before the birth of our Saviour, Christ.

We find that Alexander, at sight of the crocodiles, for some time confounded the Indus with the Nile; owing pro-

bably to the saying of Herodotus, that the Nile and the Indus were the only rivers, in which the crocodile had been seen. Having arrived at the mouth of the Indus, the Grecian army was terribly alarmed at the sight of the huge and awful billows, which rolled in at the mouth of this river. They had perhaps never seen the ebb and flow of the tide before: so that scarcely any officer of this vast and magnificent army could be got to head the further progress of this enterprise; for all felt doubt and dismay at the sight of the ocean, whose breast heaving, in this part of the globe, with higher tides than in most other seas, seemed to portend celestial vengeance at their impiety in approaching the limit of the world. This horror had been increased by finding, at break of day, their ships, which they had anchored during night, left on dry ground by the ebb of the tide. When, however, Nearchus had accepted the command, and they had got out to sea, the first thing that struck their attention was, that the sun being vertical at noon day, they projected no shadow, and that upon occasion, it even deflected towards the south; that stars which they had seen high up in the northern sky, now decreased in altitude, or sank altogether below the horizon; and that others, never visible before, now rose up in the south. As Nearchus coasted along Gedrosia, now Beloochistan, his sailors saw, for the first time, the whale, spouting out streams of water into the air, which, descending like a whirlpool, so alarmed the sailors, that their navigation would have been at an end, had not Nearchus, by raising the shouts of his men, and the din of trumpets, terrified and scared down the monster of the deep. For a great part of their voyage they found it difficult, or impossible, to procure corn, so that they were reduced to live upon fish; and, worse than all, as these Greeks dolefully complained, on the flesh of turtle, which abounded on the coast!

11. The voyages of Eudoxus now claim our attention. He was a native of Cyzicus, who flourished about 130 years B. C. He seems to have been an officer of fortune. Like many others, whose ardent minds have impelled them to explore, and to relate, things strange and unheard of, he has been misrepresented and ridiculed by the geographers and critics of his time. There is a natural indisposition to believe that which does not accord with one's own experience; through which incredulity we are sometimes as liable to err, as by an unthinking confidence. Bruce, the celebrated traveller, at the end of the last century, who had related the circumstance, not unusual, of an Abyssinian cutting steaks from the flank of a cow, skewering up the wound, and then driving her out to pasture, was thus satirized by the witty poet of the day:—

Nor have I been where men—what lack, alas!
Kill half a cow, and turn the rest to grass.

Eudoxus made several voyages down the Red Sea, and towards the East, at the instigation, and with the aid of Ptolemy Evergetes, king of Egypt, and his successor; but, eager to pursue the grand object of nautical honour, the circumnavigation of Africa, he seems to have eschewed royal patronage, and to have set out on his own account, with the assistance of some friends whom he got to join him.

We ought to observe that the traditions, or records, of the circuit of Africa, having been formerly made, were now becoming apocryphal; the geographers of the times having decided that the regions to the south, or the torrid zone, were utterly uninhabitable, by reason of the extreme heat, while the regions to the north, forming the frigid zone, were unapproachable, by reason of the intense cold. They believed, theoretically, that there was another temperate zone, corresponding with their own, beyond the torrid; but that this southern temperate zone was completely severed from the northern by unendurable heat. Hence, in the time of Mela and Ptolemy, it was believed that the ocean passed through Africa, and that the Nile rose in the southern division, and, flowing under the sea, appeared again in Upper Egypt.

For some time all proceeded favourably, until the crew of Eudoxus, fearing lest they should be swallowed up amid the heaving billows of the Atlantic, urged the vessel so close to the shore, that it was stranded on one of the dangerous sand-banks abounding on the coast. A smaller and more compact galley of fifty oars, was formed from the fragments of the stranded vessel; in which ship he continued to proceed southward, but was at last forced to return, his resources not being equivalent to the end proposed, after the disaster of the shipping. He is said to have made a second attempt, with the issue of which we are not so well acquainted. He seems to have been set down as an impostor; and is reported to have told many fables and other absurd stories of his voyages and adventures. According to some, he really made the circuit of Africa. Some nations he found dumb; which relation has in it a stroke of probability, for, not understanding the language of foreigners, the natives might have thought it as well to be silent.

Of some people he related, we are told, that they had no tongues, of others, that being mouthless, they received their food up the nostrils. Some nations, we know, completely cover up the lower parts of their faces; but the account of things originally true, though strange, becomes exaggerated and distorted by passing from one narrator to another. In a word, this navigator seems, by common consent, to have been more meritorious than fortunate.

12. When the Romans began, and continued to practise navigation, it was to serve their purpose of conquest; but, to gratify their luxury, the extremities of the known world were ransacked, and thus maritime enterprise was indirectly promoted. Their ships, when unemployed in war, made a survey of the dominions which their power had acquired. Thus, at the end of the first century of the Christian era, Agricola, the governor of Britain, discovered it to be an island by sailing round it. The opportunity of surveying the coasts of the Erythrean Sea was furnished by the regular trading voyages, undertaken by the Alexandrian merchants from the north of the Red Sea down into the Indian Ocean, which was the ancient Erythrean. The merchant-vessels of the Roman empire seem to have navigated this sea to the right, as far south as the Isle of Madagascar; and to the left, as far as the coasts of



ROSTRA AND HEADS OF ANCIENT SHIPS.

Malabar, of which Arrian, who flourished about A. D. 140, gives us an account, in his work called the *Periplus*, or *Circumnavigation*. The general facts herein related do not differ materially from those which have come under modern observation: the people of the coast are little changed in manners or living, their country has the same appearance, and its productions are much the same as the author of the *Periplus* alludes to.

With regard to the form of the vessels, employed by the Phœnicians and other neighbouring nations, about the same period, it seems that those vessels intended for commercial purposes were without keels, and bore a certain resemblance to the barges of the Hollanders at the present day. They were flat-floored, round, broad, drawing little water, and of very great breadth, in proportion to their length; so that they might be capable of containing a larger quantity of commodities than would be the case under any other form. Their floor-timbers were continuous; and, with the addition of one futtock only on each side (called by the Greeks *enactia*, meaning the ribs or internal parts of the animal body), the frame was completed.

Before the introduction of the keel, the framework of the vessel was formed of timbers bent round, and kept in the curved form by beams passing across, to which the timbers were bolted; but as this was a laborious practice, the keel became introduced, by which the necessary shape of the frame was more easily ensured. The Latin word for *keel* is *carina*, from *curro*, to *run*, alluding to the mode in which the keel runs or cuts through the water. The frame was covered with planking; the planks being fastened to the frame by large nails or bolts formed of iron, some of which passed through both plank and timber, and were clenched at the end to render the fixture more complete. It has been ascertained, that the mode of dove-tailing, which is now so frequently applied in carpentry, was known in those days; for when the planks were not long enough to reach from stem to stern of the vessel, they were joined end to end, the ends being dove-tailed into each other, by which they were prevented from starting out from their places.

We may here notice, in addition to what was said in the first article, a strange mode of attacking an enemy, as adopted by Hannibal, in a war with Pontus; which was by throwing vessels filled with snakes on the enemies' decks. The ships of Pontus thought it strange to see potters' vessels hanging from the yard-arms of Hannibal's ships; but when those same vessels were thrown on their own decks, and snakes were perceived to crawl out of them, the effect produced was just what Hannibal had anticipated; namely, that the uncommon event frightened and dismayed a brave people, who would not have shrunk from any of the ordinary dangers of war. On other occasions, casks containing inflammable matter were hung from the projecting head of the vessel; and when the head was brought so as to be over the deck of the enemy's vessel, the casks were opened, and the inflammable matter shaken out, and precipitated upon the deck. Sometimes these casks were placed on the ends of long poles, placed across or aslant the deck.

There seems reason to believe that the destructive purposes of war were more conducive to the improvement of ships than was the peaceful object of commerce: accordingly, the strengthening and improvement of the timbers and other parts of a vessel became more and more an object of attention, as nations became more and more involved with each other in political or warlike dissensions. Experiments were made, and experience was appealed to, as to the best kinds of wood for ship-building. The Phœnicians, the Grecians, the Carthaginians, and the Romans, successively directed their thoughts into this channel. The fir was found to be the lightest, as well as the easiest to work: the oak, on the other hand, though more difficult in application, proved to be the strongest and the most durable. Besides these, the elm, the cedar, the cypress, the pitch-pine, the ilex (a species of oak), the ash, and even the alder, were severally tried: the oak, the fir, and the pitch-pine, were those in general use.

As the science advanced in general use and repute, practice and experience introduced certain maxims, some of which were really found necessary, while others were whimsical and capricious. Hesiod, for example, informs us that it was deemed improper to fell any timber for the purpose of ship-building, except on the 17th day of the moon's age, because, it being then in the wane, the sap or internal moisture, which is the grand cause of early decay, would be considerably lessened. Another writer extends

the time, and allows that if trees be cut down between the 15th and the 23rd days of the moon, they will endure for a long time without perishing; but he adds that, if that limitation be transgressed, the daily practice and experience of all artisans may convince the world it would become worm-eaten and rotten in an incredibly short space of time. Some supposed that the timber felled on the day of the new moon was absolutely incorruptible; they were even attentive to the quarter from whence the wind blew, and to the season of the year; for instance, in the beginning of Autumn it was deemed improper to fell timber for ship-building, except the wind was westerly, or, in the Winter, unless it blew from the north.

THE ROMANCE OF ANCIENT NAVIGATION, AS INDUCED BY THE DESIRE OF MONOPOLY IN TRADE.

We must now say a few more words on the motives, which are presumed to have led the Phœnicians, and the subsequent mariners of antiquity, to the affectation of mystery and horror, with which they were so wont to shroud all their naval enterprises. The Phœnicians, so celebrated for commerce, and consequently for navigation, whose pilots manned the ships of the nations, and conducted the vessels of Solomon over the Red Sea, the Persian Gulf, and the Mediterranean, as far as Tarshish, "the silver country," are placed even by Homer in a most unfavourably moral light. Iniquity and deceit are their characteristics, both in Sacred and Profane history. Hence the term "Punic faith," as applied to the Carthaginians, implied *treachery*. The especial source, to which the equivocal conduct of the people of Tyre and Sidon may be traced up, is their desire and endeavour to preserve to themselves exclusively the trade and commerce of the world; possessing, as they did, the privilege of serving the Egyptian, and other nations, whose religion deterred them from pursuing maritime enterprises. The people of Egypt had long ceased to cultivate the naval art; for they dreaded the sea, which swallowed up their great divinity, the Nile. This river the Phœnicians were never allowed to enter. In such sort did the Arabians, in after ages, become navigators for the Hindoos, who were superstitiously afraid of the sea. This gave the Phœnicians power, wealth, pleasure; in short, every advantage, whether for good or ill, which this world furnishes. They were also the great slave-traders of the world. Having once attained to this pitch of envied distinction, they could not bear the idea of putting their convenience in jeopardy, as they knew, or fancied, they must do, if rivals competed with them in the foreign markets. This leads us to suspect the motives, which made Hiram, the Tyrian monarch, sneer at the inland cities, given up to him by Solomon. The Phœnicians wanted, doubtless, a harbour for ships, such as that of Joppa. The keenness and activity of the Greeks was justly formidable to them. They therefore went upon a bullying system; and, like arrant braggarts, told how they had met in various rimes with—

The Cannibals, that did each other eat,
The Anthropophagi, and men whose heads
Do grow beneath their shoulders.

The Phœnicians, with Tyre and Sidon as their two principal cities, engrossed, as has been before stated, by far the greater part of the commerce of the then known world: they brought the gold, and gems, and spices of the East from India, Persia, &c., to Tyre and Sidon, by caravans or land-carriage, and distributed them to the nations of the West by means of their shipping on the Mediterranean. From an early period, however, they thirsted to gain possession of some port, which should give them a command of the navigation of the Red Sea. This object, for a long time, they could not attain; for the eastern shores of the Red Sea, or Arabian Gulf, were in the hands of the Arabians and Assyrians, while the western shores were in the power of the Egyptians and Ethiopians. They therefore strove to obtain possession of some port on the Mediterranean, near what is now called the Isthmus of Suez, in order that, by a land-carriage of a few miles, they might connect together the navigation of the Mediterranean and the Red Sea. This object they attained by gaining possession of Rhinocorura, a city on the boundary between Palestine and Egypt. By this plan they extended their commerce to a vast extent, by making the Red Sea the channel of communication between Tyre and the eastern countries, instead of transporting their commodities by land.

The jealousy with which the Phœnicians regarded any attempt on the part of other nations to share with them

the advantages and profit derivable from commercial navigation, was strikingly shown in numerous instances. If, at any time, when bound on a foreign voyage, they observed a stranger in company with them, and found him endeavouring to pursue the same track, they immediately altered their intended course, using every possible means to avoid him; and to prevent him from following them; it is even asserted that they often purposely risked the loss of their vessels and their own lives, rather than afford the inhabitants of any other country than their own the smallest opportunity of breaking into their monopoly, or holding any share whatever in the commerce of the world. So fearful were they of rivalry, and so pertinaciously bent were they on keeping everything to themselves, that to add to the natural dangers of the seas, and to increase such discouragement as might prevent other nations from exposing themselves to it, they became pirates, and declared themselves at war, by turns, with every country in the then known world; whenever they met with vessels to which they thought themselves superior in force, and consequently able to overcome.

Terrific accounts of the dangers of foreign navigation were propagated among the lively, but credulous, people of the Morea, who not only received these stories with facility, but added embellishments of their own to that which had already been ungraciously imposed upon them. The Greeks, too, possessing an open and communicative spirit, promulgated these accounts in their various writings; and with all the skill which proficiency in literature could effect. From the Phœnicians, therefore, for evident reasons, nothing to the purpose could be learned. The Romans, by destroying all their records and vestiges of ancient glory, hoped that nothing would be learned from the Carthaginians.

What little knowledge, dimmed by the length of its passage, people had of the East, came to them by commercial transactions. They heard that the precious commodities of the East were obtained under circumstances of peculiar difficulty and peril. So hideous and alarming were the objects to be encountered; after escaping the dangers of the sea, that the task of purveying the desired luxuries was gladly relinquished to those who chose to undergo such danger. The golden sands of India swarmed thickly with ants, as big as foxes; and wonderful caution and expedition was necessary in gathering up the precious dust, loading it on camels, and getting off, before swarms of these monstrous insects should environ and destroy both men and beasts. Cinnamon, Herodotus tells us, was brought from the country of Bacchus, that is, India. It was carried into Arabia by certain birds to form their nests with, which were built on dangerous and inaccessible places. The Arabs would strew large pieces of flesh below their nests, which the birds descending would carry off to their young. The nests would break down with the weight, and an opportunity of gathering up the cinnamon was afforded. Cassia was found on the borders of a lake by persons covered over with hides and skins, to save themselves from the assaults of enormous bats, which occupied the neighbouring trees. The real truth seems to have been since made out; that these celebrated spices, which the Egyptians sought after, and which the Hebrews used in the composition of the holy anointing oil of the tabernacle and of the other sacred things, were brought from the coasts of Malabar, the islands of Ceylon and Sumatra, and other eastern regions, by Arabian merchants, from the earliest times; that the Arabs, in fact, engrossed the East Indian commerce, until the discovery of the monsoons, and navigation had so far advanced, as to enable the Greeks to steer off from the shores of Arabia. For many ages these Arabians were met by the Phœnicians, whose place was afterwards usurped by the Greeks. Whether frankincense came originally from the land of Arabia, or from the mountains of India, as some say, winged serpents were its jealous guardians. We are also told of trees bearing wool for fruit, by which is meant the cotton-trees.

It would be tedious to dwell upon the stories of Sirens, who seduced and changed the hardy mariners into beasts; of one-eyed Cyclops, to whom the human kind were but as insects, and who cut the tallest trees of the forest for their walking-sticks; people with the heads of horses; the pigmies and cranes; confounded perhaps with the monkeys; the horned birds; the Phœnix; the Sphynx,—

Perverse, all monstrous, all prodigious things,

Gorgons, and hydras, and chimeras dire.—MILTON.

All such, then, are mere inventions, which arise, as the foregoing pages will show, from fear and misapprehension; in proportion to the ignorance of the mariner, or from his interested and selfish motives.

THE MONSOONS: A KNOWLEDGE OF THE EARTH INCREASED BY NAVIGATION.

THE first great natural relief, given to ancient navigation, was the discovery of the trade-winds which prevail in the Indian Ocean. These winds, from the dependence which may be placed upon them, and from their consequent value to navigation, are called *trade-winds*, and extend about thirty degrees on each side of the Equator. These winds, however, maintain their regularity only in the open ocean. Where land breaks the continuity of the liquid surface, great changes are produced; but the most remarkable effects exist in the Indian Ocean. The third degree of south latitude is a boundary between distinct winds; from that boundary northward to the continent of Hindostan, a north-east wind blows from October to April, and a south-west from April to October; while from the same boundary to the tenth degree of south latitude, a north-west wind blows from October to April, and a south-east from April to October. These winds are called *monsoons*. The term *monsoon*, or, according to the Persian, *monsum*, implies *seasons*; and is so used in the Malayan, *moossin*, and other dialects of the East. The *breaking up of the monsoons*, or periodical changes in the direction of these winds, divides the Indian year into two *seasons*. The monsoons on the eastern side of the globe, originate with the trade-winds, of which they are a species, produced by the diversity of continent and islands, seas and gulfs, in this part of the world. These periodical currents of winds, if noticed by the Arabians, were not made to serve their maritime trade, until the keener enterprise of the West, in the person of Hippalus, about 50 A.D., first ventured to steer off from the Arabian and Persian shores, and to be impelled eastward in the direction of the wind. A voyage which had consumed years, now took up but as many months, by a conformity, on the part of the mariner, with this invariable law of nature. The means of profit and information were now less monopolized, and the West became better acquainted with the inhabitants and produce of the East.

The navigation to the Indies was continued, when the Romans became masters of Egypt, by sailing down the Arabian Gulf, and from thence to the mouth of the river Indus, along the southern coasts of Arabia and Persia. But, under the Emperor Claudius, this route was so far changed, that after emerging from the Arabian Gulf, they cut across the Indian Ocean directly to the mouth of the Indus, by noticing, and taking advantage of, the time when the south-west trade-wind blew. The trade was carried on with India thus:—The goods that were intended for the Indian markets, were embarked at Alexandria, and carried up the Nile, a distance of about three hundred miles, to Coptus. From the latter place, the merchandise was carried on camels' backs to Berenice, a distance of two hundred and sixty miles. Berenice is on the shore of the Red Sea, and there the goods were warehoused, until the proper season for sailing; when they steered for the opposite coast of Arabia, and took on board frankincense, and other Arabian commodities, giving arms, knives, vessels, &c., in return. They now proceeded on their voyage to India; whence, having disposed of their articles of merchandise, and got gold, spices, drugs, &c., in return, they pursued their voyage back to Alexandria, where they usually arrived about December or January. The Indian commodities were conveyed from Berenice to Alexandria in the way before described; and a fleet sailed annually from the latter place to Rome, conveying the treasures of the East.

When the Constantinopolitan empire was formed, by the division of the Roman empire into two parts, their maritime and commercial arrangements were very extensive. One fleet, called the fleet of Alexandria, was destined to bring to the capital the produce of India, as conveyed to the Red Sea. Another fleet was that of Seleucia, on the river Orontes, by which an intercourse was kept up with Persia, and higher Asia. A third fleet was stationed in the Euxine, or Black Sea, by which intercourse could be kept up with the nations of Eastern Europe, while at the same time a check could be given to the ravages of the uncivilized tribes of Scythia.

Various opinions were held by the ancients respecting the form and surface of the earth. The followers of Thales believed the earth to be a sphere; this was about 600 years B. C. The successors of Thales got into the notion that it was of a cylindrical form: some gave it the shape of a drum; others of a cube. Many believed it to be a high mountain, with an infinitely extended base, and that the stars moved round and round its summit; but Heraclides, the disciple of Aristotle, who lived about 335 B. C., actually taught that the earth had the figure of a ship. Some Indian sects are said to hold similar opinions. Anaximander, the disciple of Thales, was the first who represented the earth by maps and spheres.

With the improvement of navigation, advanced the knowledge of the earth; both, however, being still imperfectly understood:—witness, Strabo's comparison of the Spanish peninsula to "a hide spread out." The ancients knew that a great boundary to the West was formed by the Atlantic Ocean; but the confines of the earth towards the East they supposed were illimitable. Hence the distance on the earth's surface, measured from W. to E. they termed *Longitude*, or *measurement in length*, which they supposed infinitely greater than the *measurement in breadth* N. and S., which they termed *Latitude*. The knowledge of this began to be made practically useful for fixing the positions of places, hitherto often doubtful, on the earth's surface, by Ptolemy, in the middle of the second century of the Christian era. But this, the most celebrated geographer of antiquity, only approximates towards correctness. The Mediterranean Sea he makes 20° too long; the breadth of the Caspian Sea he makes to exceed the length; and the mouth of the Ganges is placed 46° out of its place. Nor can we wonder that the maps of the ancients should be incorrect, when, not yet possessing the magnetic needle, their sailing bore no reference to the heavens, and their maps were formed from road-books or itineraries, wherein marching distances were set down by the guides of an army; or from a sort of log-book, wherein was inserted the distance the ship had sailed, as calculated from point to point. But it surprises us at learning that the two former errors, mentioned above, were not corrected in modern maps until the first half of the last century.

To a nation which has an insular position, or good command of the sea, a naval force (which Themistocles, nearly 500 years B. C., understood the oracle to mean, when it advised the Athenians to defend themselves with wooden walls,) has been found, even from the earliest ages, to be the surest glory and defence. The influence of a state so fortunate has always been most widely and efficiently felt; and its power, whether for good or evil, has always been proportionally increased.

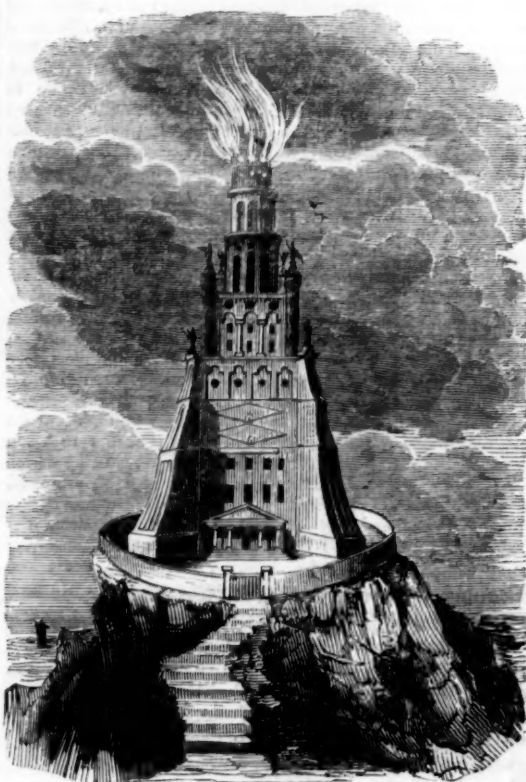
Before concluding, we should observe that it was customary, in ancient times to give an appellation to a vessel, according to the place from whence it started, or according to the purpose to which it was intended to be applied. Thus, Phaselus, a small yacht, pinnace, or pleasure-vessel, was named, in all probability, from Phaselis, a town in Pamphylia, belonging to the Cilicians, where such boats were much in use:—Cydarus, a vessel peculiar to a river in Thrace, of the same name:—Parones, which were small vessels built on the Parian Islands, in the Ægean Sea, the inhabitants of which were much accustomed to use those vessels:—Myoparones, nearly of the same description with those last mentioned, and acquiring their title from the same cause, with the addition of the term Myon, a city in Epirus, where the use of them was much adopted. Cicero states that the name Cybea was applied to a large vessel built for the purposes of merchandise, and so called from the word "cibus," which is the Latin for meat or food. The term Gaulus, was applied to vessels nearly round, somewhat resembling the present jolly-boat, which term was probably derived from the same Latin word, which signifies a *milk-pail*:—the term Corbitæ was applied to such vessels as Cæsar saw when he invaded Britain,—which we have already seen (p. 34) were made of wicker-work,—the word "corbis" signifying a wicker-basket:—Caudicæ, was a term applied to rafts, and was derived from "caudex," the stump or body of a tree:—Hippagines, from *hippos*, a horse, was applied to vessels employed for the transportation of cavalry or horses:—Pontones,—from which is derived the word *pontoons*,—was the term applied to such vessels as were adapted to the passage of rivers. Many others might be enumerated.

The naval art had advanced no further when the Gothic

irruptions into the southern climes of Europe, and consequent downfall of the Roman empire, threw Navigation, with all the other arts and sciences, back into their original barbarism. They flourished, however, in another part of the world, whither we must attend their footsteps,—at least when they seek the sea,—and hail their restoration in Europe. But here may properly be drawn the line, which bounds the ancient naval art and practice from that of subsequent times; and the crossing of this line will be the commencement of a dissertation on the navigation of the Middle ages.

THE WATCH-TOWER, OR LIGHT-HOUSE, ERECTED BY
PTOLEMY SOTER, ON THE ISLE OF PHAROS, NEAR
ALEXANDRIA.—ABOUT 300 B.C.

THIS was a large building, composed of fine white marble, one hundred and thirty-five feet high, on the top of which fires were constantly maintained, for the direction of ships upon the coast. The expense of this tower was about eight hundred Alexandrian talents, or about 330,000*l.* English. The Isle of Pharos was in the bay of Alexandria, about seven furlongs from the continent, and was joined thereto by a causeway. The tower was accounted one of the seven wonders of the world. The architect, Sostratus, was ordered to inscribe on it, "King Ptolemy, to the gods, the saviours, for the benefit of sailors:" but, wishing to claim all the glory, he engraved his own name on the solid marble, which he covered with cement, on which he formed Ptolemy's inscription. When the cement had decayed by time, Ptolemy's name disappeared, and the following inscription then became visible:—"Sostratus, the Cnidian, son of Dexiphanes, to the gods, the saviours, for the benefit of sailors." Dexiphanes, was he who made the causeway mentioned above. This light-house is alluded to in our last paper, see page 40.



THE WATCH TOWER OF PHAROS.

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